

Review of Pre-service Education on Essential Nutrition Actions for Maternal, Infant, and Young Child Nutrition (MIYCN) for Health Professionals in the ASEAN Region

Regional Report



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Acronyms and Abbreviations

A&T	Alive & Thrive
AFAS	ASEAN Framework Agreement on Services
AJCC	ASEAN Joint Coordinating Committee
ALD	ASEAN Leader's Declaration
ASEAN	Association of South East Asian Nation
BPPSDMK	Badan Pengembangan dan Pemberdayaan Sumber Daya Manusia Kesehatan / Health Human Resources Development and Empowerment Agency
BMS	Breast milk substitute
CI	Clinical Instructor
CHED	Commission on Higher Education
CCS	Coordinating Committee on Services
D3	Profesional ahli madya / Diploma / Associate Degree
D4	Sarana sans terapan / Bachelor of Applied Science
EENC	Early essential newborn care
GATS	General Agreement on Trade and Services
HSSWG	Healthcare Services Sectoral Working Group
HIV	Human immunodeficiency virus
IYCF	Infants and Young Child Feeding
ICM	International Confederation of Midwives
MIYCN	Maternal, Infant and Young Child Nutrition
MW	Midwifery
MAM	Moderate acute malnutrition
MRA	Mutual Recognition Arrangement
NCP	Nutrition Center of the Philippines
PRC	Professional Regulatory Commission
RLE	Related learning experience
S1	Sarjana / Bachelor
SY	School Year
SAM	Severe acute malnutrition
SKDI	Standar Kompetensi Dokter Indonesia / Competency Standards for Indonesia Doctors
UNICEF	United Nation International Children's Fund
WASH	Water, sanitation and hygiene
WHO	World Health Organization

Executive Summary

Medical doctors, nurses and midwives are primary providers of maternal, infant and young child nutrition services. Thus, it is essential for health professionals to be adequately equipped with knowledge and skills to advice, counsel, help solve feeding difficulties, and know when and where to refer mothers and caregivers who experience more complex problems. Despite this need, maternal, infant, and young child nutrition (MIYCN) is generally overlooked in the pre-service and in-service training of health professionals worldwide. Pre-service training refers to training or education designed to train students during undergraduate courses or provided to persons prior to employment. Training content and methods are guided by an approved curricula and a detailed training syllabus.

WHO and UNICEF recommend prioritizing the inclusion of harmonized MIYCN content into the basic curricula of medical and paramedical professionals as a feasible and sustainable way to address knowledge gaps and to mitigate issues related to frequent staff turnover and rotation. Involving academic institutions and ensuring regular updates of pre-service training material is also essential for developing a well-trained cadre of health and nutrition professionals. Further, pre-service training curricula should devote sufficient time to developing counseling skills for MIYCN, including hands-on practice, so that health professionals are able to not only provide appropriate messages to mothers, but to negotiate, problem-solve, and provide practical support to mothers. MIYCN content should also be harmonized at all levels of the health system, from facility to community level, so that those who provide nutrition counseling disseminate consistent messages and apply best practices for counseling caregivers and families. These messages and their delivery should also be free of and protected from commercial interests.

This project aimed to conduct a mapping exercise in four ASEAN countries (Indonesia, Lao PDR, Myanmar and Philippines) to better understand the existing content and gaps in pre-service health worker education related to MIYCN in the ASEAN region. The course curricula reviewed in this project were limited to Medical Doctor, Nursing, Midwifery and Nutrition for undergraduate students and relevant curricula were collected from August to November 2018.

Findings

Health professionals' roles, training, licensing and regulation. Medical doctors are based in central primary health care facilities conducting supervisory visits to peripheral health facilities; nurses are either hospital-based or a combination of direct service provision and administrative work; midwives are the main frontline workers in the delivery of MIYCN services; and nutritionists are limited to hospitals and to primary health facilities. In each country, the training of medical and allied health students is based on an approved pre-service curriculum with additional program-specific training often done in-service and / or as part of continuing education. In Lao PDR and Myanmar, the educational institutions for health professionals are government-run and follow a single curriculum. On the other hand, private universities and schools predominate in Indonesia and the Philippines. Educational institutions are required to follow a minimum curriculum approved by the government but are given the discretion to adapt, enhance, or modify the prescribed curriculum to meet local needs. The course curriculum in the four countries have been 1) recently revised and being implemented, 2) revised and awaiting approval or 3) undergoing revisions to comply with global / regional standards. The health professional licensing and regulation systems

in the four countries also vary with Lao PDR still in the process of implementing a licensing system. In response to the ASEAN mutual recognition agreements (MRA), mobility mechanisms for medical practitioners and for nurses in all four countries have also been drafted and are in various stages of implementation.

MIYCN content of midwifery courses. Midwifery course curricula and syllabus were retrieved only from the Philippines, Lao PDR and Myanmar. The MIYCN theoretical concepts are integrated in midwifery subjects on care for women during pregnancy, labor, postpartum and care for the newborn while counseling skills and anthropometry-related skills are presumably practiced during laboratory, clinical and community practicums. However, the importance of essential nutrition actions such as food fortification, nutritional care and support during emergencies, complementary feeding, and diagnosis and management of Moderate Acute Malnutrition (MAM) and of Severe Acute Malnutrition (SAM) are not uniformly integrated in midwifery courses among the countries. Among the courses in which MIYCN topics are integrated, some of the references cited are outdated and do not include the most recent WHO / UNICEF MIYCN-related publications. The provision of practicum for the application of counseling skills is also limited.

MIYCN content of nursing courses. Information needed to accomplish the nursing curriculum content checklist was collected only from the Philippines and Lao PDR. For the Philippines, almost all topics are included in the revised curriculum except for nutrition program management skills. For Lao PDR, infant and child growth and development assessment is taught in Pediatric Nursing; breastfeeding and its complications are integrated in other nursing subjects. However, counseling is not included in the nursing pre-service curriculum. The management of SAM and MAM; WASH, food fortification; complementary feeding and other IYCF topics; and relevant policies and laws are not mentioned in the Lao PDR nursing curriculum/syllabus.

MIYCN content of medical courses. The medical curriculum for Indonesia and the Philippines were the only ones collected for this review. In both countries, most MIYCN topics of interest are included in the curriculum of respondent medical schools, with the exception of nutrition program management. The inclusion of and extent of application of clinical skills on early essential newborn care (EENC), lactation management, inpatient management of SAM, key complementary feeding messages, and nutrition in emergencies may vary among respondent schools and may have to be validated.

MIYCN content of nutrition courses. Among the four countries, only the Philippines and Indonesia offer nutrition programs as a part of higher education. All the nutrition academic programs in both Indonesia and Philippines include the MIYCN topics sought in this review. The Indonesia curriculum has separate courses on Nutrition Counseling while in the Philippines, theoretical concepts and skills are integrated within other courses. However, it is unclear in both countries, whether counseling skills are required to be practiced on actual patients or whether students are mentored during practicum.

Good practices. The 1) establishment of partnerships between health professional educational institutions and government health departments for training, 2) updating faculty on government health programs, and 3) integrating these into the course curricula will ensure consistency between pre-service training and the needs of country-specific MIYCN programs. Benchmarking course topics on global or international standards during curriculum revisions will allow new health professionals to be competitive internationally and promote mobility of services.

Gaps and opportunities. The ongoing changes in the educational system of health professional courses in the four countries open opportunities for improvements in incorporating and teaching MIYCN related topics. These could be through updating syllabus content, developing updated resource materials, training educators and preceptors, and if feasible, creating an academic program on nutrition for countries without it.

A review of the course curricula in the four countries shows that MIYCN topics are integrated in the courses. However, more detailed review of course syllabi for selected countries shows non-standardized course content, either in the time allotted for teaching MIYCN topics or outdated references used for teaching, or both. Opportunities for integrating MIYCN topics in the doctor/bachelor of medicine and health-related course curriculum are available. The issued ASEAN Mutual Recognition Agreements for medical practitioners and nursing services is a plausible venue for including standardization of MIYCN topics in the agreements. The revisions, either recent or ongoing, in the nursing and in the midwifery course curricula are a chance to engage stakeholders and advocate for emphasis of MIYCN counseling skills and government nutrition programs in the curriculum.

The limited MIYCN counseling concepts and skills in the pre-service curriculum professionals is a glaring gap that needs to be addressed. Clinical exposure during internship has to be further improved and educators, clinical instructors and preceptors have to be capacitated. If pre-service training includes these, in-service training may be limited to polishing these skills, providing updates or advanced competencies.

Project Background

Organizational background

Alive & Thrive (A&T) is an initiative to save lives, prevent illness, and ensure healthy growth and development through the promotion and support of optimal maternal nutrition, breastfeeding, and complementary feeding practices. The Alive & Thrive initiative, managed by FHI 360, is currently funded by the Bill & Melinda Gates Foundation, Irish Aid, the Tanoto Foundation, and UNICEF.

Since 2009, A&T has demonstrated that innovative approaches to improving maternal, infant, and young child nutrition practices can be delivered at scale and have an impact. A&T has evolved from at-scale implementation work in three countries (Bangladesh, Ethiopia, and Viet Nam), to providing a robust and evidence-rich package of technical assistance in five countries (Bangladesh, Burkina Faso, Ethiopia, India, and Nigeria) and two regions (Southeast Asia and West Africa). A network of local and national partners lends further voice and credence to the A&T initiative. Efforts to strengthen systems, empower policy advocates, and promote the strategic use of data provide the foundation for A&T to promote sustainable, evidence-based strategies for maternal, infant, and young child nutrition.

Since 2014, A&T has provided strategic technical assistance to seven countries in Southeast Asia (Viet Nam, Cambodia, Indonesia, Laos, Myanmar, Thailand, and the Philippines). These countries are among the 10-member states of the Association of Southeast Asian Nations (ASEAN). This regional support continues until 2021 and aims to accelerate progress toward meeting breastfeeding-related World Health Assembly and Sustainable Development Goal targets by the ASEAN member states.

The Nutrition Center of the Philippines (NCP) is a non-stock, non-profit organization, which has a 44-year history of modeling and implementing policy-shaping health and nutrition interventions based on social and biomedical research. NCP has contributed to health policy by providing an evidence-base for innovative, cost-effective and sustainable nutrition strategies and interventions, and advocating innovative approaches and enabling legislation. NCP partners with different stakeholders in public health nutrition with the view of ensuring nutrition security through conducting operational, clinical and impact evaluations, advocating policies, innovating products, and empowering communities. NCP's strategic goals are: 1) Reduce micronutrient deficiencies; 2) Improve infant and young child nutrition practices; 3) Address nutritional requirements for the prevention and treatment of communicable and non-communicable diseases; and 4) Improve maternal and neonatal health. For this project, NCP was contracted by A&T to conduct a qualitative assessment of pre-service curriculum of medical and allied health courses and determine if topics included are supportive of MIYCN concepts and delivery services.

The role of health workers in promoting MIYCN behaviors

As the primary providers of essential health services, healthcare professionals are important influencers of decisions about MIYCN and they play a critical role in providing support for

recommended behaviors. Therefore, it is essential for health professionals to have basic knowledge and skills to give appropriate advice, counsel, help solve feeding difficulties, and know when and where to refer mothers and caregivers who experience more complex problems. In almost all countries, midwives play a major role in delivering MIYCN services; particularly in the public health care system. The roles of nurses range from primary health care delivery to providing supervision and administrative support. Physicians are based in higher-level facilities (large local health centers in some contexts, district hospitals in others) where they provide clinical care. They also conduct monitoring and supervisory visits to peripheral health centers under their jurisdiction. Nutritionists, also play a role in primary health care delivery. However, not all countries include them in their human resources for health.

Despite this need, MIYCN is generally a neglected area in the pre-service and in-service training of health professionals worldwide. Pre-service training refers to training or education designed to train students during undergraduate courses or provided to persons before the start of a job. On the other hand, in-service training refers to training offered to professionals either as part of their professional development or as continuing education. Pre-service and in-service training should complement each other and equip professionals with necessary knowledge and skills in health promotion, disease prevention and clinical management.

WHO and UNICEF recommend prioritizing the inclusion of harmonized MIYCN content into the basic curricula of medical and paramedical professionals as a feasible and sustainable way to address knowledge gaps and to mitigate issues related to frequent staff turnover and rotation. To support this effort, WHO has developed a model chapter for textbooks for medical students and allied health professionals [WHO, 2009]. Involving academic institutions and ensuring regular updates of pre-service training material is also essential for developing a well-trained cadre of nutrition professionals. Further, pre-service training curricula should devote sufficient time and focus to support and counseling skills for MIYCN, including hands-on skills practice, so that health professionals are able to not only provide appropriate messages to mothers, but to negotiate, problem-solve, and provide practical support to mothers. MIYCN content should also be harmonized at all levels of the health system, from facility to community level, so that those who provide nutrition counseling disseminate consistent messaging and apply best practices for counseling caregivers and families.

The ASEAN Framework Agreement on Services and health workforce mobility

In 1995, the ASEAN Framework Agreement on Services (AFAS) was drafted and signed by member nations in recognition of the importance of liberalization in trade in services within ASEAN [ASEAN, 2015]. The aims of AFAS are to:

- Enhance cooperation in services amongst Member States in order to improve the efficiency and competitiveness, diversify production capacity and supply, and distribution of services of their service suppliers within and outside ASEAN;
- Substantially reduce restrictions to trade in services amongst Member States; and^[1]_[SEP]
- Liberalize trade in services by expanding the depth and scope of liberalization beyond those undertaken by Member States under the General Agreement on Trade in Services (GATS), with the aim of realizing a free trade area in services.^[1]_[SEP]

A Coordinating Committee on Services (CCS) was created in 1996 to oversee the policy work of trade liberalization in services. During this time, CCS was tasked with undertaking services integration in seven priority sectors: air transport, business services, construction, financial services, maritime transport, telecommunications, and tourism. Several meetings through the years have led to realignments of CCS' sectoral priorities. As of 2015, only the business services, healthcare, logistics and transport services, and telecommunication and IT services sectoral working groups are active.

One of the initiatives to facilitate mobility of people for cross-border provision of services is the Mutual Recognition Arrangements (MRA). The MRAs facilitate trade in services by mutual recognition of authorization, licensing, or certification of professional service suppliers obtained in one ASEAN Member State by other ASEAN Member States. The goal of the MRA is to facilitate the flow of foreign professionals, taking into account relevant domestic regulations and market demand conditions.

Within the healthcare sector, there are three professional services with existing MRAs:

- MRA on Nursing Services (8 December 2006 in Cebu, Philippines); [SEP]
- MRA on Medical Practitioners (26 February 2009 in Cha-am, Thailand); and
- MRA on Dental Practitioners (26 February 2009 in Cha-am, Thailand) [SEP]

These three MRAs are managed by their respective ASEAN Joint Coordinating Committee (AJCCs)¹ and overseen by the Healthcare Services Sectoral Working Group (HSSWG)² under the CCS. The objectives of these healthcare-related MRAs are to:

- Facilitate mobility of professionals within ASEAN; [SEP]
- Exchange information and enhance cooperation in respect of mutual recognition of these professionals; [SEP]
- Promote adoption of best practices on standards and qualifications; and [SEP]
- Provide opportunities for capacity building and training. [SEP]

Through the ASEAN Leaders' Declaration (ALD) on Ending All Forms of Malnutrition signed in 2017, Member States have committed to addressing malnutrition and diet-related non-communicable diseases through well-coordinated and coherent regional and sustained multi-sectoral inter-linkages and partnerships. This includes the formulation of a multi-sectoral framework and strategic plan to guide country policies and interventions and to set minimum standards for service delivery and implementation as well as a commitment to strengthen human and institutional capacities to address malnutrition.³ Ongoing discussions to finalize this operational framework provide an excellent opportunity for the provision of evidence-based recommendations for the Health Cluster and Member States. The MRAs for medical practitioners

¹ <https://asean.org/asean-economic-community/sectoral-bodies-under-the-purview-of-aem/services/healthcare-services/nursing-services-ajccn/> ; <https://asean.org/asean-economic-community/sectoral-bodies-under-the-purview-of-aem/services/healthcare-services/medical-practitioners-ajccm/>

² <https://asean.org/asean-economic-community/sectoral-bodies-under-the-purview-of-aem/services/healthcare-services/>

³ <https://asean.org/asean-leaders-declaration-on-ending-all-forms-of-malnutrition/>

and nurses in the ASEAN region present an opportunity for strengthening and aligning health worker training on MIYCN across the region.

Objectives

Alive & Thrive proposed to conduct a mapping exercise to better understand the existing MIYCN content and gaps in pre-service health worker education in the ASEAN region. The specific objectives of the project are to:

1. Collect and consolidate pre-service training curricula for health professionals that are recognized and included within the formal health system, including: doctors, nurses, and midwives, from the following A&T priority countries in ASEAN: Indonesia, Lao PDR, Myanmar, and the Philippines; ^[1]_[SEP]
2. Provide an overview of the medical education system in each country, including the recognized roles related to MICYN for each type of provider within the health system; ^[1]_[SEP]
3. Synthesize the MIYCN content covered in pre-service training curricula, including theoretical and practical training; ^[1]_[SEP]
4. Identify gaps in pre-service training and recommend appropriate strategies for addressing these gaps, including leveraging regional initiatives in ASEAN; ^[1]_[SEP]
5. Where applicable, identify best practice cases in terms of curriculum design and content.

This regional report is limited to the activities and results of the study in the four countries: Indonesia, Lao PDR, Myanmar and Philippines. The findings, interpretations and conclusions expressed herein are those of the authors, and do not necessarily reflect the views of the Alive & Thrive and UNICEF, its Executive Directors, or the governments they represent.

Methods

Preliminary preparations

Preliminary activities included sending out of request letters to pertinent government offices and organizations [**Annex 1**]; identification and listing of schools offering medicine, midwifery, nursing, and nutrition in the four countries; selection of schools that would be approached for the review; and preparation of a curriculum content checklist.

Request letters were sent to relevant offices in each country to introduce the project and request a list of accredited schools in their country. The listings of schools per course per country were prepared using the collected documents and available databases.

We proposed that all schools in Myanmar and Lao PDR be included in the review given the small number. For Indonesia and the Philippines, a sample of the schools would be selected. For the Philippines, all state medical schools were included in the sample, and then a counterpart private medical school was selected within its region, if available. Schools offering nursing, midwifery and nutrition were ranked from highest to lowest number of licensure examinees based on the latest available data from the Professional Regulation Commission (PRC). Schools with the highest ranking were selected from each region, if available.

For Indonesia, the medical schools included in the sample were based on the number of enrollees for School Year (SY) 2017/2018. For each province, one public and one private school were selected - while alternates were selected from the other provinces with no public schools. For nursing and midwifery schools, provinces within the same region were clustered together (Java, Kalimantan, Nusa Tenggara, Papua, Sumatra and Sulawesi) before purposive sampling. For each province or cluster, one public and one private school were selected on the basis of the number of enrollees for SY 2017/2018. The course degrees being offered was also considered, so as to have an opportunity to collect curriculum / syllabus from Diploma (D) 3 (Associate Degree), D4 (Bachelor of Applied Science) and Sarjana 1 (S1) (Bachelor) degrees. Alternates were either selected from the other provinces with no public schools or from the other provinces within the same cluster.

A curriculum content checklist [**Annex 2**], listing the specific topics to be reviewed within the course curriculum was also prepared in consultation with A&T and UNICEF. The checklist was divided into two categories: theoretical concepts and practical skills. However, the checklist could only be used when reviewing the course syllabus, which contained the detailed topics per course. The checklist was based on several WHO and UNICEF guidelines listed below:

- Infant and young child feeding: Model chapter for textbooks for medical students and allied health professionals, WHO 2009
- Combined course on growth assessment and IYCF counseling, WHO 2012
- Essential Nutrition Actions: improving maternal, newborn, infant and young child health and nutrition, WHO 2013

- Guideline updates on HIV and infant feeding: the duration of breastfeeding and support from health services to improve feeding practices among mothers living with HIV, WHO and UNICEF 2016
- Use of multiple micronutrient powders for point-of-use fortification of foods consumed by infants and young children aged 6 to 23 months and children aged 2 to 12 years, WHO 2016
- Guideline on protecting, promoting and supporting breastfeeding in facilities providing maternity and newborn services, WHO 2017

Collection of course curricula

All four countries have specific offices tasked with developing, approving, and storing the course curriculum of their academic programs. Letters requesting copies of the course curricula were sent to these offices. For Myanmar and Lao PDR, course curricula were requested from the Ministry of Health and Sports or University of Health Sciences, as there is one standard curriculum followed by all public medical, nursing, and midwifery schools in these two countries.

For the Philippines, the minimum standard course curricula for all four courses were downloaded from the Commission on Higher Education website⁴. For Indonesia, the minimum standard curricula was collected from the Health Human Resources Development and Empowerment Agency (BPPSDMK) of the Ministry of Health website. However, not all course curricula targeted for this review were accessible to the researchers [Table 1].

For Indonesia only the Bachelor of Nutrition course curriculum was collected; according to BPPSDMK, other course curricula are under revision, and thus not yet available. Curriculum content reported here for nursing and midwifery courses are based on those downloaded from websites of Polytechnic institutes offering these courses.

For Lao PDR, Bachelor's Degree in Medicine was not collected as no one person has a copy of the complete curriculum and that the Faculty of Medicine of the University of Health Sciences is undergoing reorganization. For Myanmar, the Department of Human Resources for Health only provided a list of courses in Nursing and Midwifery where nutrition topics are integrated.

Curricula were collected from August to November 2018.

Review of curriculum content

Letters requesting a copy of course curricula and accomplishment of the curriculum content checklist were sent to all sampled private and public schools in Indonesia and in the Philippines. Only one school offering Doctor of Medicine replied from Indonesia, while for the Philippines, the following are the number of schools who replied and accomplished the checklist: seven for medicine, three for nursing, and five each for midwifery and for nutrition. Content was consolidated and compared with the Curriculum Content Checklist as reference.

⁴ <https://ched.gov.ph/>

Key Informant Interviews

Key informant interviews were conducted with resource persons from the four countries [Annex 3]. From these interviews the following information were gathered: nutrition programs implemented in the country; integration of nutrition topics in pre-service curriculum of medicine and health courses; requirements for course completion; licensing of health professionals; employment placement; gaps in the pre-service training curriculum; and recommendations for the courses discussed.

Table 1. Summary of collected course curricula from four countries

Country	Medicine	Nursing	Midwifery	Nutrition
Indonesia	Doctor of Medicine	Associate Degree (D3) Bachelor of Applied Science (D4) Bachelor	Associate Degree (D3) Bachelor of Applied Science (D4)	Associate Degree (D3) Bachelor of Applied Science (D4) Bachelor*
Lao PDR	None collected	Middle Degree* Higher Degree* Bachelor*	Higher Degree* Bachelor*	Course not available
Myanmar	None collected	Syllabus of Nutrition course only	Syllabus of nutrition course only Diploma (revised syllabus, not yet approved)	Course not available
Philippines	Doctor of Medicine*	Bachelor* Sample syllabus collected	Bachelor*	Bachelor*

**minimum standard curriculum issued by the government agency*

Results of the pre-service curriculum review

Health professionals' training, licensing and regulation

In each country, the training of medical and allied health students is based on an approved pre-service curriculum with additional program-specific training often done during in-service and / or as part of continuing education. In Lao PDR and Myanmar, the majority, if not all, of the educational institutions for health professionals are government-run and follow a single curriculum. On the other hand, private universities and schools predominate in Indonesia and the Philippines. The government agencies tasked to oversee higher education in these two countries have a prescribed curriculum. Educational institutions are required to follow a minimum curriculum but have discretion as to how the prescribed curriculum can be adapted, enhanced, or modified to meet local needs.

The system of licensing and regulation of health professionals in the four countries is also variable with Lao PDR still in the process of implementing a licensing system. In response to the ASEAN MRA, mobility mechanisms for medical practitioners and nurses in all four countries have also been drafted and are in various stages of implementation.

MIYCN content of midwifery courses

Midwifery course syllabus was retrieved only from the Philippines, Lao PDR and Myanmar. These were used to accomplish the curriculum content checklist [Table 2]. Most of the MIYCN topics sought in this review are integrated in the courses of the midwifery academic programs. The MIYCN theoretical concepts are integrated in midwifery care during pregnancy, labor, and postpartum and newborn care while counseling skills and anthropometry-related skills are presumably practiced during laboratory, clinical and community practicums. However, essential nutrition actions such as food fortification, nutritional care and support during emergencies, complementary feeding, and diagnosis and management of Moderate Acute Malnutrition (MAM) and of Severe Acute Malnutrition (SAM) are not integrated in the courses in some of the countries reviewed. Although MIYCN topics are integrated, in some courses, the references cited are not updated nor do they include the most recent WHO / UNICEF MIYCN-related publications. Counseling skills application is also limited.

Table 2. Curriculum content checklist for Midwifery

Topics	Philippines	Lao PDR	Myanmar
Knowledge of Nutrition-Specific Interventions			
Maternal Health and Nutrition			
Nutritional assessment of pregnant and lactating women (dietary assessment, MUAC, gestational weight gain, clinical assessment for micronutrient deficiencies)	√	X	√
Iron and folic acid supplementation for pregnant and lactating women	√	√	√
VA supplementation for lactating women	√	√	√
Calcium supplementation for pregnant women	√	√	√

Topics	Philippines	Lao PDR	Myanmar
Iodine supplementation for pregnant and lactating women	√	√	√
Birth spacing and the lactation amenorrhea method	√	X	X
Key messages in nutrition counseling for pregnant women			
-- One extra meal per day	√	X	√
-- Micronutrient supplements/treatment (or protein-energy supplements for undernourished mothers)	√	X	√
-- Water, sanitation and hygiene	√	√	√
Key messages in nutrition counseling for lactating women			
-- Two extra meals per day	√	X	√
-- Micronutrient supplements/treatment (or protein-energy supplements for undernourished mothers)	√	X	√
-- Vitamin A supplementation (from birth to 6 weeks post-delivery according to national protocol)	√	X	√
-- Water, sanitation and hygiene	√	√	√
Infant and Young Child Feeding			
Importance of IYCF and recommended practices			
-- Importance of skin-to-skin with newborn	√	X	√
-- Good positioning and attachment	√	X	√
-- Early initiation of breastfeeding (give colostrum)	√	X	√
-- Exclusive breastfeeding from birth up to 6 months	√	X	√
-- Breastfeeding on demand – up to 12 times day and night	√	X	√
-- Water, sanitation and hygiene	√	X	√
Physiological basis of breastfeeding	√	X	√
Advantages of breastfeeding	√	√	√
Disadvantages of formula/ replacement feeding	√	√	√
Common breast conditions			
-- Inverted nipple	√	X	X
-- Breast engorgement	√	X	X
-- Mastitis and breast abscess	√	X	X
Complementary feeding			
-- Timing, amount, frequency, consistency	√	X	X
-- Risks of starting complementary feeding too early	√	X	X
-- Risks of starting complementary feeding too late	√	X	X
-- Nutritional care of infants and children with diarrhea	√	X	X
Continuing support for IYCF	√	X	X
Appropriate feeding in exceptionally difficult circumstances			
-- Low birth weight	√	X	X
-- Severe acute malnutrition	√	X	X
-- Infants of HIV-positive mothers	√	X	X
-- Sick child <6 months of age	√	X	X
-- Relactation	√	X	X
Nutritional care and support during emergencies			
-- Establishing safe 'corners' for mothers and infants	X	X	X
-- One-to-one counseling	X	X	X
-- Mother-to-mother support	X	X	X
-- Mental and emotional support for traumatized women having difficulty responding to their infants	X	X	X
-- Ways to breastfeed infants and young children who are separated from their mothers	X	X	X
-- Timely registration of newborns to support early initiation and exclusive breastfeeding	X	X	X
-- Early identification and management of infants and children with acute malnutrition to prevent serious illness and death	X	X	X

Topics	Philippines	Lao PDR	Myanmar
-- Nutritional adequacy and suitability of the general food ration for older infants and young children	X	X	X
-- Ensuring and easing access to basic water and sanitation facilities, cooking, food and non-food items	X	X	X
Policies and laws relevant to the protection, promotion and support of breastfeeding	√	X	X
Essential Nutrition Actions			
Prevention of vitamin A deficiency	√	√	√
Prevention of iron-deficiency anemia	√	√	√
Prevention of iodine deficiency	√	√	√
Use of Micronutrient Powder by children 6 - 23 mo old	√	√	X
VA supplementation in children <5 years	√	√	√
VA supplementation in children with measles	√	√	√
Daily iron supplementation in 6-23 mo old children	√	X	√
Zinc supplementation for diarrhea management	√	√	√
Optimal iodine nutrition in young children	√	√	√
Nutritional care and support of HIV-infected 6 mo - 14 yr old children	√	X	X
Diagnosis and Management of Severe Acute Malnutrition			
-- Use of MUAC and/or WFH as per WHO child growth standards	√	X	X
-- Clinical nutrition assessment	√	X	X
-- Outpatient management of SAM without complications (2013 Guidelines)	√	X	X
-- Inpatient care of severe acute malnutrition (SAM) with medical complications (2013 Guidelines)	√	X	X
-- Individual monitoring and follow-up	√	X	X
Diagnosis and Management of Moderately Acute Malnutrition	X	X	X
Food fortification			
-- Wheat / maize	X	X	X
-- Rice	X	X	X
-- Salt and condiments	X	X	X
Practical Skills / Role Plays / Demonstrations / Exercises			
Communication and support skills			
-- Establishing rapport with the mother	applied	X	applied
-- Assessing the child's growth and breastfeeding practices	applied	X	applied
-- Analyzing the information provided	applied	X	applied
-- Acting on the information provided by the caregiver	applied	X	applied
-- Listening and learning skills	applied	X	applied
-- Building confidence and giving support skills	applied	X	applied
Maternal health assessment and counseling			
-- Assessing gestational weight gain	applied	X	applied
-- Counseling pregnant and lactating women on a healthy, adequate diet	applied	X	applied
IYCF demonstration			
-- How to help a mother position and attach her baby	applied	X	applied
-- How to express breast milk by hand	applied	X	X
-- How to cup feed a baby	applied	X	X
Assessment of IYCF practice			
-- How to take feeding history, 0 - 6 months	X	X	X
-- How to take feeding history, 6 - 23 months	X	X	X
Counseling			
-- Using GALIDRAA checklist	X	X	X
-- Assessing and classifying (analyzing) IYCF	X	X	X
-- Measuring and assessing growth and counseling on growth and feeding	applied	X	X
Assessing the child's growth			
-- How to weigh a mother and baby using an electronic scale	X	X	applied

Topics	Philippines	Lao PDR	Myanmar
-- How to measure baby's length or height	applied	X	applied
-- How to plot weight and height in a child growth chart	applied	X	applied
-- How to interpret the results of the child's growth using the weight for age growth curve	applied	X	applied
-- How to calculate the weight for height Z score	applied	X	applied
-- How to interpret the weight for height Z score	applied	X	applied
-- How to take MUAC	applied	X	applied
-- How to assess for bilateral pitting Odema (kwashiorkor)	applied	X	applied
Nutrition program management skills for acute malnutrition, stunting, breastfeeding and other IYCF problems			
Assess the burden, prevalence, and distribution of acute malnutrition, stunting, and other IYCF problems	X	X	X
Map, mobilize, and consult partners and stakeholders	X	X	X
Perform bottleneck analysis for nutrition programs	X	X	X
Develop a multi-sectoral plan to address malnutrition	X	X	X
Develop a monitoring and evaluation plan to track IYCF and nutrition indicators	X	X	X
Clinical management skills			
Management and support for infant feeding in maternity facilities (EINC and lactation management up to 3 days post-partum)	X	X	X
Management of breast conditions and other breastfeeding difficulties			
-- How to manage inverted nipples	X	X	X
-- How to manage breast engorgement	X	X	X
-- How to manage breast mastitis and breast abscess	X	X	X
Diagnosis and management of SAM			
-- Assessment	X	X	X
-- Out patient therapeutic care	X	X	X
-- In patient therapeutic care	X	X	X
-- Individual monitoring and follow-up	X	X	X
Management of MAM	X	X	X

√=Included

X=Not included

At the time of this review, the Philippines, Indonesia and Myanmar midwifery academic programs were either undergoing revisions or pending final approval of revisions. Lao PDR's midwifery programs were updated in 2015 (Higher Diploma) and 2017 (Bachelor) and are scheduled for review every five years. Myanmar's [draft Diploma in Midwifery Curriculum, September 2018] midwifery curriculum revisions adhere to the International Confederation of Midwives (ICM) global standards. Thus, to determine if midwifery education across countries is standardized, this review compared the midwifery curriculum from Indonesia, Lao PDR, Myanmar and Philippines, with the ICM curriculum outline.

International Confederation of Midwives

The International Confederation of Midwives (ICM) is an accredited, non-governmental organization representing midwives and midwifery to organizations worldwide to achieve common goals in the care of mothers and newborns. It is an association of 132 member organizations of professional midwives from 113 countries around the world, with associations in Cambodia, Indonesia and the Philippines, as its members. One of the pillars of ICM is the promotion of international standards for midwifery education by supporting the development and expansion of high-quality undergraduate and postgraduate midwifery education programs and by overseeing

the production of technical resources required to support international standardization and effective implementation.⁵

ICM issued both the Global Standards for Midwifery Education (amended in 2013) and the Essential Competencies for Basic Midwifery Practice (under review as of 2018) in 2010 to serve as benchmarks of global standards for midwifery education and define the minimal expectations for performance or competencies and the scope of midwifery practice for a given country. [ICM, 2013] The association further issued the Model Curriculum Outlines for Professional Midwifery Education (under review as of 2018) for a three-year direct entry midwifery curriculum. [ICM, 2012] Member countries often refer to these resources in developing and updating their midwifery curriculum to meet the global standards.

Table 3 shows the comparison of midwifery academic program courses of four countries to the 23 curriculum modules outlined by ICM. These topics are the minimum benchmark for a 3-year direct entry midwifery program. Additional topics may be added depending on assessed country-specific needs and cultural appropriateness. Almost all ICM modules are included in the four countries' midwifery academic programs, though typically not as independent courses but rather integrated into several different courses. For instance, in the Philippines, complications during pregnancy, intrapartum and postpartum are all integrated in Midwifery 104: Clinical Management. Some modules such as pharmacology, advanced midwifery, professional issues in midwifery, midwifery entrepreneurship, and women's abortion needs are not included in some or in all of the midwifery academic programs in the four countries. Inclusion (or exclusion) of topics seems to be dictated by the duration and number of semesters in the study program, the educational system setting, and cultural appropriateness.

The ICM supports the WHO recommendation for exclusive breastfeeding in the first six months and encourages member associations to ensure that midwifery education enables students to gain competency in supporting breastfeeding women. [ICM, 2017] Other MIYCN topics are included in the ICM curriculum under the nutrition life cycle and midwifery care courses.

Table 3. Summary of courses in the midwifery academic program by country compared to the International Confederation of Midwives curriculum outline

ICM Curriculum Modules ¹	Philippines		Indonesia		Lao PDR		Myanmar
	Bachelor	Diploma	Associate Degree D3	Applied Science D4	Bachelor	Higher Diploma	Diploma ²
Foundations of Midwifery							
Midwifery (MW) Sciences	√	√	√	√	√	√	√
Basic Health Skills for Midwives	√	√	√	√	√	√	√
Life Cycle Nutrition	√	√	√	√	√	√	√
Introduction to MW Care	√	√	√	√	√	√	√
Becoming a Midwife I	√	√	√	√	√	√	√
MW Care: Healthy Pregnancy	√	√	√	√	√	√	√

⁵<https://www.internationalmidwives.org/>, accessed on 31 December 2018

MW Care: Healthy Labor / Birth	√	√	√	√	√	√	√
MW Care: Healthy Postpartum / Newborn / Families	√	√	√	√	√	√	√
Well-Woman Health Care	√	√	√	√	√	√	√
Midwifery Care of Common Complications of Childbearing and Newborns							
Public Health for Midwives	√	√	√	√	√	√	√
MW Ethics & Law	√	√	√	√	√	√	√
MW Teaching & Counseling	√	√	√	√	√	√	√
Becoming a Midwife II	X	X	X	X	X	X	X
Pharmacology for Midwives	√	X	√	√	√	√	X
MW Care: Complications Pregnancy	√	√	√	√	√	√	√
MW Care: Complications Labor / Birth	√	√	√	√	√	√	√
MW Care: Complications PP/NB & Families	√	√	√	√	√	√	√
Basic Life Saving Skills for Midwives	√	√	√	√	√	√	√
Autonomous Midwifery Practice & Ongoing Professional Development							
Advanced Midwifery	X	X	X	X	X	X	X
Professional Issues in Midwifery	√	X	X	√	√	X	X
MW Care Women's Abortion Needs	√	√	X	X	X	X	√
Being a Midwife & The Business of Midwifery	√	X	X	X	X	X	X
Autonomous MW Care during the Reproductive Years ³	√	√	√	√	√	√	√

√=Included

X=Not included

¹International Confederation of Midwives. 2012. Model Curriculum Outline for Professional Midwifery Education

²based on revised draft course curriculum for Diploma in Midwifery, September 2018; unapproved and not for circulation

³defined as full scope midwifery practice in a variety of settings; assumed to be referring to clinical practicum in variable settings.

MIYCN content of nursing courses

Information needed to accomplish the nursing curriculum content checklist was collected only from the Philippines and Lao PDR [Table 4]. For the Philippines, almost all topics are √ in the revised curriculum except for nutrition program management skills. For Lao PDR, infant and child's growth and development assessment is taught in Pediatric Nursing; breastfeeding and its complications are integrated in higher Nursing courses. However, counseling is not included

in the nursing pre-service curriculum. Topics on SAM and MAM; WASH, food fortification; complementary feeding and other IYCF topics; and relevant policies and laws are not mentioned in the Lao PDR nursing curriculum/syllabus.

Table 4. Curriculum content checklist for Nursing

Topics	Philippines	Lao PDR
Knowledge of Nutrition-Specific Interventions		
Maternal Health and Nutrition		
Nutritional assessment of pregnant and lactating women (dietary assessment, MUAC, gestational weight gain, clinical assessment for micronutrient deficiencies)	√	X
Iron and folic acid supplementation for pregnant and lactating women	√	X
VA supplementation for lactating women	√	X
Calcium supplementation for pregnant women	√	X
Iodine supplementation for pregnant and lactating women	√	X
Birth spacing and the lactation amenorrhea method	√	X
Key messages in nutrition counseling for pregnant women		
-- One extra meal per day	√	X
-- Micronutrient supplements/treatment (or protein-energy supplements for undernourished mothers)	√	X
-- Water, sanitation and hygiene	√	√
Key messages in nutrition counseling for lactating women		
-- Two extra meals per day	√	X
-- Micronutrient supplements/treatment (or protein-energy supplements for undernourished mothers)	√	X
-- Vitamin A supplementation (from birth to 6 weeks post-delivery according to national protocol)	√	X
-- Water, sanitation and hygiene	√	X
Infant and Young Child Feeding		
Importance of IYCF and recommended practices		
-- Importance of skin-to-skin with newborn	√	X
-- Good positioning and attachment	√	X
-- Early initiation of breastfeeding (give colostrum)	√	√
-- Exclusive breastfeeding from birth up to 6 months	√	√
-- Breastfeeding on demand – up to 12 times day and night	√	√
-- Water, sanitation and hygiene	√	X
Physiological basis of breastfeeding	√	√
Advantages of breastfeeding	√	√
Disadvantages of formula/ replacement feeding	√	√
Common breast conditions		
-- Inverted nipple	√	√
-- Breast engorgement	√	√
-- Mastitis and breast abscess	√	√
Complementary feeding		
-- Timing, amount, frequency, consistency	√	X
-- Risks of starting complementary feeding too early	√	X
-- Risks of starting complementary feeding too late	√	X
-- Nutritional care of infants and children with diarrhea	√	X
Continuing support for IYCF	√	X
Appropriate feeding in exceptionally difficult circumstances		
-- Low birth weight	√	X
-- Severe acute malnutrition	√	X
-- Infants of HIV-positive mothers	√	X
-- Sick child <6 months of age	√	X

Topics	Philippines	Lao PDR
-- Relactation	√	X
Nutritional care and support during emergencies		
-- Establishing safe 'corners' for mothers and infants	√	X
-- One-to-one counselling	√	X
-- Mother-to-mother support	√	X
-- Mental and emotional support for traumatized women having difficulty responding to their infants	√	X
-- Ways to breastfeed infants and young children who are separated from their mothers	√	X
-- Timely registration of newborns to support early initiation and exclusive breastfeeding	√	X
-- Early identification and management of infants and children with acute malnutrition to prevent serious illness and death	√	X
-- Nutritional adequacy and suitability of the general food ration for older infants and young children	√	X
-- Ensuring and easing access to basic water and sanitation facilities, cooking, food and non-food items	√	X
Policies and laws relevant to the protection, promotion and support of breastfeeding	√	X
Essential Nutrition Actions		
Prevention of vitamin A deficiency	√	X
Prevention of iron-deficiency anemia	√	X
Prevention of iodine deficiency	√	X
Use of Micronutrient Powder by children 6 - 23 mo old	√	X
VA supplementation in children <5 years	√	X
VA supplementation in children with measles	√	X
Daily iron supplementation in 6-23 mo old children	√	X
Zinc supplementation for diarrhea management	√	X
Optimal iodine nutrition in young children	√	X
Nutritional care and support of HIV-infected 6 mo - 14 yr old children	√	X
Diagnosis and Management of Severe Acute Malnutrition		
-- Use of MUAC and/or WFH as per WHO child growth standards	√	X
-- Clinical nutrition assessment	√	X
-- Outpatient management of SAM without complications (2013 Guidelines)	√	X
-- Inpatient care of severe acute malnutrition (SAM) with medical complications (2013 Guidelines)	√	X
-- Individual monitoring and follow-up	√	X
Diagnosis and Management of Moderately Acute Malnutrition (MAM)	√	X
Food fortification		
-- Wheat / maize	√	X
-- Rice	√	X
-- Salt and condiments	√	X
Practical Skills / Role Plays / Demonstrations / Exercises		
Communication and support skills		
-- Establishing rapport with the mother	applied	X
-- Assessing the child's growth and breastfeeding practices	applied	X
-- Analyzing the information provided	applied	X
-- Acting on the information provided by the caregiver	applied	X
-- Listening and learning skills	applied	X
-- Building confidence and giving support skills	applied	X
Maternal health assessment and counseling		
-- Assessing gestational weight gain	applied	X
-- Counseling pregnant and lactating women on a healthy, adequate diet	applied	X
IYCF demonstration		
-- How to help a mother position and attach her baby	applied	X
-- How to express breast milk by hand	applied	X
-- How to cup feed a baby	applied	X

Topics	Philippines	Lao PDR
Assessment of IYCF practice		
-- How to take feeding history, 0 - 6 months	applied	X
-- How to take feeding history, 6 - 23 months	applied	X
Counseling		
-- Using GALIDRAA checklist	applied	X
-- Assessing and classifying (analyzing) IYCF	applied	X
-- Measuring and assessing growth and counseling on growth and feeding	applied	X
Assessing the child's growth		
-- How to weigh a mother and baby using an electronic scale	applied	X
-- How to measure baby's length or height	applied	X
-- How to plot weight and height in a child growth chart	applied	X
-- How to interpret the results of the child's growth using the weight for age growth curve	applied	X
-- How to calculate the weight for height Z score	applied	X
-- How to interpret the weight for height Z score	applied	X
-- How to take MUAC	applied	X
-- How to assess for bilateral pitting Odema (kwashiorkor)	applied	X
Nutrition program management skills for acute malnutrition, stunting, breastfeeding and other IYCF problems		
Assess the burden, prevalence, and distribution of acute malnutrition, stunting, and other IYCF problems	X	X
Map, mobilize, and consult partners and stakeholders	X	X
Perform bottleneck analysis for nutrition programs	X	X
Develop a multi-sectoral plan to address malnutrition	X	X
Develop a monitoring and evaluation plan to track IYCF and nutrition indicators	X	X
Clinical management skills		
Management and support for infant feeding in maternity facilities (EINC and lactation management up to 3 days post-partum)	applied	X
Management of breast conditions and other breastfeeding difficulties		
-- How to manage inverted nipples	applied	X
-- How to manage breast engorgement	applied	X
-- How to manage breast mastitis and breast abscess	applied	X
Diagnosis and management of SAM		
-- Assessment	applied	X
-- Out patient therapeutic care	applied	X
-- In patient therapeutic care	applied	X
-- Individual monitoring and follow-up	applied	X
Management of MAM	applied	X

√=Included

X=Not included

In addition, the nursing course curriculum contents from the Philippines, Indonesia, and Lao PDR were compared [Table 5]. No nursing course curricula were provided by Myanmar. The courses listed are presumably where MIYCN topics are integrated. All topics listed are included in the Philippines nursing course curriculum.

For Indonesia, Basic Nutrition is not included in the Bachelor of Nursing curriculum while Diet Therapy is not √ in all nursing academic programs. Diet Therapy or Nutrition Therapy is a course teaching approaches and treatment of illnesses through nutrition. Often, MAM and SAM are √ in this course.

For Lao PDR, Diet Therapy is not included in the Middle level Diploma of Nursing. Health Education, although included in all nursing academic programs in this review, are primarily taught by lectures with students required to do role-play; no separate practicum hours are allotted.

Students are presumed to be able to apply the learned counseling concepts and skills once deployed during their community and hospital practicum.

Table 5. Comparison of courses in nursing academic programs where MIYCN-related topics are integrated in 3 countries

Courses	Philippines		Indonesia		Lao PDR		
	Bachelor	Bachelor	Assoc Degree	Applied Science	Higher Diploma	Mid-level Diploma	Bachelor
Basic Nutrition	√	X	√	√	√	√	√
Nutrition and Diet Therapy	√	X	X	X	√	X	√
Health Assessment	√	√	√	√	√	√	√
Community Health Nursing	√	√	√	√	√	√	√
Care of Mother, Child, Adolescent	√	√	√	√	√	√	√
Care of Mother and child at-risk	√	√	√	√	√	√	√
Health Education	√	√	√	√	√	√	√
Nursing Practicum	√	√	√	√	√	√	√

√=Included

X=Not included

MIYCN content of medical courses

The medical curriculum for Indonesia and the Philippines were the only ones collected for this review [Table 6]. The 2012 Standar Kompetensi Dokter Indonesia (SKDI) prescribes the core competencies medical students must achieve in seven areas: professionalism and ethics, self-development and lifelong learning, elective communication, information management, basic medical science, clinical skills, and management of health problems. Its sample list of subjects incorporates nutrition as a cause of disease and pathologic basis of disease. Assessment and management of malnutrition is included among the clinical skills required. The extent of MIYCN topic integration can still be further validated as only one medical school responded to the survey.

The Commission on Higher Education (CHED) - prescribed medical curriculum in the Philippines includes Basic Nutrition, Obstetrics and Gynecology including Women's Health, and Pediatrics and Nutrition including child protection in the minimum curricular content. Most MIYCN topics of interest were included in the curriculum of respondent medical schools, with the exception of nutrition program management. The inclusion of and extent of application of clinical skills on EENC, lactation management, inpatient management of SAM, key complementary feeding messages, and nutrition in emergencies varied among respondent schools.

Table 6. Curriculum content checklist for Medicine

Topics	Philippines	Indonesia
Knowledge of Nutrition-Specific Interventions		
Maternal Health and Nutrition		
Nutritional assessment of pregnant and lactating women (dietary assessment, MUAC, gestational weight gain, clinical assessment for micronutrient deficiencies)	√	√
Iron and folic acid supplementation for pregnant and lactating women	√	√
VA supplementation for lactating women	√	√
Calcium supplementation for pregnant women	√	√
Iodine supplementation for pregnant and lactating women	√	√
Birth spacing and the lactation amenorrhea method	√	√
Key messages in nutrition counseling for pregnant women		
-- One extra meal per day	√	√
-- Micronutrient supplements/treatment (or protein-energy supplements for undernourished mothers)	√	√
-- Water, sanitation and hygiene	√	√
Key messages in nutrition counseling for lactating women		
-- Two extra meals per day	√	√
-- Micronutrient supplements/treatment (or protein-energy supplements for undernourished mothers)	√	√
-- Vitamin A supplementation (from birth to 6 weeks post-delivery according to national protocol)	√	√
-- Water, sanitation and hygiene	√	√
Infant and Young Child Feeding		
Importance of IYCF and recommended practices		
-- Importance of skin-to-skin with newborn	√	√
-- Good positioning and attachment	√	√
-- Early initiation of breastfeeding (give colostrum)	√	√
-- Exclusive breastfeeding from birth up to 6 months	√	√
-- Breastfeeding on demand – up to 12 times day and night	√	√
-- Water, sanitation and hygiene	√	√
Physiological basis of breastfeeding	√	√
Advantages of breastfeeding	√	√
Disadvantages of formula/ replacement feeding	√	√
Common breast conditions		
-- Inverted nipple	√	√
-- Breast engorgement	√	√
-- Mastitis and breast abscess	√	√
Complementary feeding		
-- Timing, amount, frequency, consistency	√	√
-- Risks of starting complementary feeding too early	√	√
-- Risks of starting complementary feeding too late	√	√
-- Nutritional care of infants and children with diarrhea	√	√
Continuing support for IYCF	√	√
Appropriate feeding in exceptionally difficult circumstances		
-- Low birth weight	√	√
-- Severe acute malnutrition	√	√
-- Infants of HIV-positive mothers	√	√
-- Sick child <6 months of age	√	√
-- Relactation	√	√

Topics	Philippines	Indonesia
<i>Nutritional care and support during emergencies</i>		
-- Establishing safe 'corners' for mothers and infants	√	√
-- One-to-one counseling	√	√
-- Mother-to-mother support	√	√
-- Mental and emotional support for traumatized women having difficulty responding to their infants	√	√
-- Ways to breastfeed infants and young children who are separated from their mothers	√	√
-- Timely registration of newborns to support early initiation and exclusive breastfeeding	√	√
-- Early identification and management of infants and children with acute malnutrition to prevent serious illness and death	√	√
-- Nutritional adequacy and suitability of the general food ration for older infants and young children	√	√
-- Ensuring and easing access to basic water and sanitation facilities, cooking, food and non-food items	√	√
Policies and laws relevant to the protection, promotion and support of breastfeeding	√	√
<i>Essential Nutrition Actions</i>		
Prevention of vitamin A deficiency	√	√
Prevention of iron-deficiency anemia	√	√
Prevention of iodine deficiency	√	√
Use of Micronutrient Powder by children 6 - 23 mo old	√	√
VA supplementation in children <5 years	√	√
VA supplementation in children with measles	√	√
Daily iron supplementation in 6-23 mo old children	√	√
Zinc supplementation for diarrhea management	√	√
Optimal iodine nutrition in young children	√	√
Nutritional care and support of HIV-infected 6 mo - 14 yr old children	√	√
<i>Diagnosis and Management of Severe Acute Malnutrition</i>		
-- Use of MUAC and/or WFH as per WHO child growth standards	√	√
-- Clinical nutrition assessment	√	√
-- Outpatient management of SAM without complications (2013 Guidelines)	√	√
-- Inpatient care of severe acute malnutrition (SAM) with medical complications	√	√
-- Individual monitoring and follow-up	√	√
Diagnosis and Management of Moderately Acute Malnutrition (MAM)	√	√
<i>Food fortification</i>		
-- Wheat / maize	√	√
-- Rice	√	√
-- Salt and condiments	√	√
Practical Skills / Role Plays / Demonstrations / Exercises		
<i>Communication and support skills</i>		
-- Establishing rapport with the mother	applied	applied
-- Assessing the child's growth and breastfeeding practices	applied	applied
-- Analyzing the information provided	applied	applied
-- Acting on the information provided by the caregiver	applied	applied
-- Listening and learning skills	applied	applied
-- Building confidence and giving support skills	applied	applied
<i>Maternal health assessment and counseling</i>		
-- Assessing gestational weight gain	applied	applied
-- Counseling pregnant and lactating women on a healthy, adequate diet	applied	applied
<i>IYCF demonstration</i>		
-- How to help a mother position and attach her baby	applied	applied
-- How to express breast milk by hand	applied	applied
-- How to cup feed a baby	applied	applied
<i>Assessment of IYCF practice</i>		
-- How to take feeding history, 0 - 6 months	applied	applied

Topics	Philippines	Indonesia
-- How to take feeding history, 6 - 23 months	applied	applied
Counseling		
-- Using GALIDRAA checklist	X	applied
-- Assessing and classifying (analyzing) IYCF	applied	applied
-- Measuring and assessing growth and counseling on growth and feeding	applied	applied
Assessing the child's growth		
-- How to weigh a mother and baby using an electronic scale	applied	applied
-- How to measure baby's length or height	applied	applied
-- How to plot weight and height in a child growth chart	applied	applied
-- How to interpret the results of the child's growth using the weight for age growth curve	applied	applied
-- How to calculate the weight for height Z score	applied	applied
-- How to interpret the weight for height Z score	applied	applied
-- How to take MUAC	applied	applied
-- How to assess for bilateral pitting Odema (kwashiorkor)	applied	applied
Nutrition program management skills for acute malnutrition, stunting, breastfeeding and other IYCF problems		
Assess the burden, prevalence, and distribution of acute malnutrition, stunting, and other IYCF problems	X	X
Map, mobilize, and consult partners and stakeholders	X	X
Perform bottleneck analysis for nutrition programs	X	X
Develop a multi-sectoral plan to address malnutrition	X	X
Develop a monitoring and evaluation plan to track IYCF and nutrition indicators	X	X
Clinical management skills		
Management and support for infant feeding in maternity facilities (EINC and lactation management up to 3 days post-partum)	applied	applied
Management of breast conditions and other breastfeeding difficulties		
-- How to manage inverted nipples	demonstrated	applied
-- How to manage breast engorgement	demonstrated	applied
-- How to manage breast mastitis and breast abscess	demonstrated	applied
Diagnosis and management of SAM		
-- Assessment	applied	applied
-- Out patient therapeutic care	demonstrated	applied
-- In patient therapeutic care	demonstrated	applied
-- Individual monitoring and follow-up	demonstrated	applied
Management of MAM	demonstrated	applied

√=Included

X=Not included

MIYCN content of nutrition courses

Among the four countries, only the Philippines and Indonesia offer nutrition programs as a part of higher education. Indonesia offers Associate Degree (D3), Applied Science (D4), and Bachelor (S1) undergraduate degree in nutrition while the Philippines only offers a Bachelor's degree in nutrition and dietetics [Table 1]. All the nutrition academic programs in both Indonesia and Philippines include the MIYCN topics sought in this review. Topics covered in these courses include: Nutrition in the Life Cycle, Nutritional Assessment, Nutrition / Diet Therapy, Nutrition Education, and Public Health Nutrition with corresponding community and hospital practicum. Both D4 and S1 degrees in Indonesia have separate courses on Nutrition Counseling unlike in the Philippines' BS Nutrition where the theoretical concepts and skills are integrated within other courses. However, it is unclear in both countries, whether counseling skills are required to be practiced on actual patients or whether and how students are mentored during practicum.

Good practices

A good practice for ensuring consistency between pre-service training and the needs of country-specific MIYCN programs that was identified in this review is the establishment of partnerships between educational institutions and government health departments for training and updating faculty on government health programs and integrating these into the course curricula. The partnership at the very least is expected to 1) provide opportunity for training a wider reach of educators; 2) use standardize and updated messages and transferable skills to students; 3) improve knowledge and skills of students and orient them on actual MIYCN strategies being implemented in the country; and 4) minimize resources spent for in-service training.

A good practice observed during curriculum revision is benchmarking course topics on global or international standards. This was observed in the revisions of midwifery and nursing pre-service curriculum. This will presumably allow new health professionals to be competitive internationally and promote mobility of services. Standardizing assessment of students' knowledge and skills using objective structured clinical examinations (OSCE) is also a good practice. OSCEs can also be developed for MIYCN topics.

Gaps and opportunities

Country-specific

Indonesia

Theoretical knowledge on breastfeeding and maternal care and nutrition seem to be incorporated in health professional pre-service curriculum. However, the inclusion of theoretical concepts on complementary feeding, updated knowledge on the management of severe acute malnutrition and current government health and nutrition programs, and the acquisition of counselling skills may need to be validated.

As of this writing, the curriculum for both midwifery and nursing are under revision, presumably to meet the MRA for nursing and the global standards. Thus, there is an opportunity for updates and insertions in the course syllabus.

Lao PDR

A very limited amount of time is devoted to nutrition within the midwifery course in Lao PDR. The nutrition course is 16 to 32 hours for the whole 6 to 8 semesters of nursing and midwifery courses. Topics are limited to 6 basic food groups and basic nutrition (macronutrients and micronutrients), its importance to the specific life stages, and corresponding deficiencies. MIYCN topics, although integrated in other courses, are not prioritized, thus again allotted limited teaching hours. The absence of nutrition counseling concepts and skills in the pre-service curriculum for some health professionals is a glaring gap that needs to be addressed.

Health professional education in the Lao PDR is focused on improving competencies of its health professionals and regulating the practice of its professions. Improvement in the curriculum geared

towards improving these competencies is being developed for the nursing academic programs. The Bachelor of Medicine academic program is expected to undergo a similar process of review and revision. For midwifery, both the Higher Diploma in Midwifery and the Bachelor of Midwifery curriculum were revised in 2015 and 2017, respectively. However, whether revisions were done to comply with any competency requirements for midwives is unclear.

The ongoing changes in the educational system of health professional courses in Lao PDR open opportunities for improvements in incorporating and teaching MIYCN related topics. These could be through updating syllabus content, developing updated resource materials, training educators and preceptors, and if feasible, creating an academic program on nutrition.

Myanmar

The quality and quantity of educators and preceptors for nutrition/MIYCN topics in the educational institutions for nursing and midwifery seem sub-optimal. Due in part to the lack of nutrition degree programs on nutrition available in the country, nutrition topics delivered during pre-service training for health workers are often taught by educators who are not formally trained in nutrition concepts or do not have experience implementing clinic nutrition or public health nutrition interventions. There is also a need to update resource materials used to teach nutrition related topics. The lack of preceptors who will mentor and evaluate students during clerkship or practicum especially in the application of nutrition-related skills is also a limitation. At present, there is no degree program on nutrition in the country that will address the need to capacitate educators and preceptors.

The curriculum revision to align with the ASEAN MRA is an opportunity to update and enhance the MIYCN content in health professional education. The ongoing updates in the curriculum should be complemented with capacity building of educators who can be experts on nutrition concepts and skills. Updated resource materials adapted to Myanmar's culture and needs should also be developed. Midwives primarily deliver maternal and child health services, thus it is recommended to initially focus efforts to improve the quality of nutrition educators in the midwifery program. The creation of a nutrition curriculum either as an undergraduate program or as a postgraduate course for health professionals is also recommended. This would develop health professionals who will be formally trained in nutrition concepts and at the same time produce competent educators and program implementers.

Philippines

The Philippines, in general, has integrated key MIYCN topics into the four pre-service course curricula. These MIYCN topics may either be a separate course or integrated into courses such as maternal and child health, child growth and development, pediatrics, community health, nutrition and diet therapy. However, counseling and clinical skills acquired during pre-service training need to be enhanced to ensure that health care providers are equipped to provide quality MIYCN counseling. Students of medicine, nursing, midwifery and nutrition are required to complete a varied number of patient-hours of experience, depending on their profession and the capacity of their school. Clinical exposure during internship or related learning experiences (RLEs) have to be further improved and educators, clinical instructors (CIs) and preceptors have to be capacitated. If pre-service training includes these, in-service training may be limited to polishing these skills, providing updates or advanced competencies.

There are currently no guidelines defining the role of public health nutritionists in frontline services. This should be defined so that nutritionists may be more systematically involved in delivering

MIYCN programs. Key informants expressed that the association of educational institutions of nutrition was not involved in consultations for the development of guidelines, orientations and trainings of government health programs, and identified this as a gap in improving the pre-service training curriculum for nutrition courses.

At present, HEIs offering Nursing and Nutrition courses are only in the first year of implementation of the new competency-based course. The HEIs and their respective associations of educational institutions are still developing the syllabus for 2nd to 4th year levels. This is an opportune time to work with them to design and plan for enhanced clinical exposure of students to MIYCN. This can be piloted in a few nursing and nutrition schools, such as schools identified as Centers of Excellence. Further, the updated BS Midwifery curriculum has yet to be approved by CHED. Its approval will also provide an opportunity to work with HEIs to enhance MIYCN in the curriculum and to pilot implementation in Midwifery schools.

Regional

A review of the course curricula in the four countries shows that in general, MIYCN topics are integrated in the courses. However, more detailed review of course syllabi for selected countries shows non-standardized course content, variable time allotted for teaching MIYCN topics, the use of outdated references, or a combination of these.

Opportunities for integrating or enhancing MIYCN topics in the doctor/bachelor of medicine and allied medical professional courses are available. The issued MRAs for medical practitioners and nursing services is a potential venue for including standardization of MIYCN topics in the agreements. The revisions, either recent or ongoing, in the nursing and midwifery course curricula are a chance to engage stakeholders and advocate for emphasis of MIYCN counseling skills and government nutrition programs in the curriculum.

Conclusions and Recommendations

The MIYCN content of health professional education, although similar between countries, may differ in terms of reference materials used for teaching, qualification and training of educators, time allotted for lectures and skills application of specific topics, or a combination of all these. There is a need to update resource materials used to teach nutrition, nutrition related topics and country-specific nutrition programs. In countries where nutrition course faculty lacks training and experience in nutrition, capacity building of current and future educators is recommended. Stakeholders in Lao PDR and Myanmar are already considering establishing a diploma or undergraduate course in nutrition to address this. This will also address the lack of preceptors who will mentor and evaluate students during clerkship, internship, practicum or RLEs.

Curriculum for medical and allied courses in all 4 countries included in this review are either recently revised or in various stages of revision. The ongoing revisions seem to be impelled by the impending AFAS implementation, as all 4 countries are ASEAN members. Efforts to standardize the MIYCN content in the health professional curriculum across countries must be integrated with efforts to standardize health professional education and regulation in general - setting competency standards, licensing, and renewal requirements.

There are already existing MRAs for medical practitioners and nurses. The MRAs, although recognizing the education or experience obtained, requirements met, and license or certification granted to health professionals in other ASEAN Member Countries, do not set any standards for qualification and training of educators, and course curriculum content and syllabus. It may be possible to work through the respective ASEAN Joint Coordinating Committees (AJCCs) the standardization of competencies, course curricula contents, and continuing education requirements across countries. The AJCCs are tasked to facilitate implementation of the MRAs and review the MRAs every five years or earlier. Parallel efforts may be made to advocate MIYCN integration in pre-service curriculum in other regional or global professional associations such as the ICM for midwifery and the ASEAN Medical Schools Network. The ICM may also be tapped to enhance MIYCN topics in their global standards for midwifery education and monitor its implementation in the target countries.

In-country efforts to address specific gaps in MIYCN content identified through this review can also be initiated through the following: 1) giving feedback on the evaluation results to the respective government agencies in charge of nutrition program management, 2) providing updates on government nutrition programs/MIYCN programs to educational institutions and accrediting bodies, and 3) engaging regulatory and licensing bodies and enjoining them to include MIYCN in licensure examinations.

Stakeholders in some of the countries recommended the issuance of MRAs for nutrition and midwifery. The issuance of such will require ASEAN member nations to follow at the very least regional standards. Again, this will provide an opportunity to standardize curriculum content for midwifery and nutrition.

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Annex

Annex 1. Summary of offices approached during preparation of list of schools by country

Country	Government	Organizations
Indonesia	Community Nutrition, and PPSDM Health Agency – Ministry of Health; Ministry of Research, Technology and Higher Education; Higher Education National Accreditation Board	Indonesian National Nurses Association; Indonesian Midwives Association; Indonesian Medical Association; Nurses Education Association (AIPNI); Midwifery Education Association (AIPKIND); Medical Education Association (AIPKI); Association of Nutritional Higher Education Institutions (AIPGI)
Lao PDR	Department of Professional Education - Ministry of Health	None
Myanmar	Department of Higher Education- Ministry of Education; Ministry of Health and Sports	Myanmar Medical Associations; Myanmar Medical Council; Myanmar Nurse and Midwife Association; Myanmar Nurse and Midwife Council
Philippines	Commission on Higher Education	Association of Philippine Schools of Midwifery; Association of Philippine Medical Colleges, Inc.; Association of Deans of Philippine Colleges of Nursing, Inc.

Annex 2. Curriculum content checklist

Name of Institution:			
Course:			
Degree			
Topics	Year level topic was introduced	Course / Subjects title	Status
Knowledge of Nutrition-Specific Interventions			
<i>Maternal Health and Nutrition</i>			
Nutritional assessment of pregnant and lactating women (dietary assessment, mid-upper arm circumference, gestational weight gain, clinical assessment for micronutrient deficiencies)			
Iron and folic acid supplementation for pregnant and lactating women			
Vitamin A supplementation for lactating women			
Calcium supplementation for pregnant women			
Iodine supplementation for pregnant and lactating women			
Birth spacing and the lactation amenorrhea method			
<i>Key messages in nutrition counseling for pregnant women</i>			
-- One extra meal per day			
-- Micronutrient supplements/treatment (or protein-energy supplements for undernourished mothers)			
-- Water, sanitation and hygiene			
<i>Key messages in nutrition counseling for lactating women</i>			
-- Two extra meals per day			
-- Micronutrient supplements/treatment (or protein-energy supplements for undernourished mothers)			
-- Vitamin A supplementation (from birth to 6 weeks post-delivery according to national protocol)			
-- Water, sanitation and hygiene			
<i>Infant and Young Child Feeding (IYCF)</i>			
<i>Importance of IYCF and recommended practices</i>			
-- Importance of skin-to-skin with newborn			
-- Good positioning and attachment			
-- Early initiation of breastfeeding (give colostrum)			
-- Exclusive breastfeeding from birth up to 6 months (avoid other liquids and food, even water)			
-- Breastfeeding on demand – up to 12 times day and night			
-- Water, sanitation and hygiene			
Physiological basis of breastfeeding			
Advantages of breastfeeding			
Disadvantages of formula/ replacement feeding			
<i>Common breast conditions</i>			
-- inverted nipple			
-- breast engorgement			
-- mastitis and breast abscess			

Topics	Year level topic was introduced	Course / Subjects title	Status
<i>Complementary feeding</i>			
- - timing, amount, frequency, consistency			
- - risks of starting complementary feeding too early			
- - risks of starting complementary feeding too late			
- - nutritional care of infants and children with diarrhea			
Continuing support for IYCF			
<i>Appropriate feeding in exceptionally difficult circumstances</i>			
- - Low birth weight			
- - Severe acute malnutrition			
- - Infants of HIV-positive mothers			
- - Sick child <6 months of age			
- - Relactation			
<i>Nutritional care and support during emergencies</i>			
- - Establishing safe 'corners' for mothers and infants			
- - One-to-one counseling			
- - Mother-to-mother support			
- - Mental and emotional support for traumatized women having difficulty responding to their infants			
- - Ways to breastfeed infants and young children who are separated from their mothers			
- - Timely registration of newborns to support early initiation and exclusive breastfeeding			
- - Early identification and management of infants and children with acute malnutrition to prevent serious illness and death			
- - Nutritional adequacy and suitability of the general food ration for older infants and young children			
- - Ensuring and easing access to basic water and sanitation facilities, cooking, food and non-food items			
Policies and laws relevant to the protection, promotion and support of breastfeeding (i.e. EO 51, WHO International Code of Marketing BMS, 10 Steps to Successful Breastfeeding etc)			
Essential Nutrition Actions			
Prevention of vitamin A deficiency			
Prevention of iron-deficiency anemia			
Prevention of iodine deficiency			
Use of Micronutrient Powder by children 6 - 23 mo old			
VA supplementation in children <5 years			
VA supplementation in children with measles			
Daily iron supplementation in 6-23 mo old children			
Zinc supplementation for diarrhea management			
Optimal iodine nutrition in young children			
Nutritional care and support of HIV-infected 6 mo - 14 yr old children			

Topics	Year level topic was introduced	Course / Subjects title	Status
Diagnosis and Management of Severe Acute Malnutrition			
- - Use of Mid-upper arm circumference and/or Weight-for-Height as per WHO child growth standards			
- - Clinical nutrition assessment			
- - Outpatient management of Severe Acute Malnutrition without complications (2013 Guidelines)			
- - Inpatient care of Severe Acute Malnutrition with medical complications (2013 Guidelines)			
- - Individual monitoring and follow-up			
Diagnosis and Management of Moderately Acute Malnutrition (MAM)			
Food fortification			
- - wheat / maize			
- - rice			
- - salt and condiments			
Practical Skills / Role Plays / Demonstrations / Exercises			
Communication and support skills			
- - Establishing rapport with the mother			
- - Assessing the child's growth and breastfeeding practices			
- - Analyzing the information provided			
- - Acting on the information provided by the caregiver			
- - Listening and learning skills			
- - Building confidence and giving support skills			
Maternal health assessment and counselling			
- - Assessing gestational weight gain			
- - Counseling pregnant and lactating women on a healthy, adequate diet			
IYCF demonstration			
- - How to help a mother position and attach her baby			
- - How to express breastmilk by hand			
- - How to cup feed a baby			
Assessment of IYCF practice			
- - How to take feeding history, 0 - 6 months			
- - How to take feeding history, 6 - 23 months			
Counseling			
- - Using GALIDRAA checklist (<u>G</u> reet, <u>A</u> sk, <u>L</u> isten, <u>I</u> dentify, <u>D</u> iscuss, <u>R</u> ecommend, <u>A</u> gree, set follow-up Appointment)			
- - Assessing and classifying (analyzing) IYCF			
- - Measuring and assessing growth and counseling on growth and feeding			
Assessing the child's growth			
- - How to weigh a mother and baby using an electronic scale			
- - How to measure baby's length or height			
- - How to plot weight and height in a child growth chart			
- - How to interpret the results of the child's growth using the weight for age growth curve			

Topics	Year level topic was introduced	Course / Subjects title	Status
-- How to calculate the weight for height Z score			
-- How to interpret the weight for height Z score			
-- How to take mid-upper arm circumference			
-- How to assess for bilateral pitting (Odema)			
<i>Nutrition program management skills for acute malnutrition, stunting, breastfeeding and other IYCF problems</i>			
Assess the burden, prevalence, and distribution of acute malnutrition, stunting, and other IYCF problems			
Map, mobilize, and consult partners and stakeholders			
Perform bottleneck analysis for nutrition programs			
Develop a multi-sectoral plan to address malnutrition			
Develop a monitoring and evaluation plan to track IYCF and nutrition indicators			
<i>Clinical management skills</i>			
Management and support for infant feeding in maternity facilities (EINC and lactation management up to 3 days post-partum)			
<i>Management of breast conditions and other breastfeeding difficulties</i>			
-- How to manage inverted nipples			
-- How to manage breast engorgement			
-- How to manage breast mastitis and breast abscess			
<i>Diagnosis and management of Severe Acute Malnutrition</i>			
-- Assessment			
-- Out patient therapeutic care			
-- In patient therapeutic care			
-- Individual monitoring and follow-up			
Management of Moderate Acute Malnutrition			

* Status

For knowledge/theoretical concepts:

0 - not included

1 - included

For skills:

0 - curriculum does not include this skill,

1 - curriculum provides demonstration of this skill

2 - curriculum requires students to role play or return demo

3 - curriculum requires students to provide this service to actual patients

Annex 3. Key informant interview of resource persons

Country	Government	Professional organizations / Educational Institutions and others
Indonesia	Director of Nutrition-MOH Center of Education for Human Resources for Health (PPSDM) – MOH Nutrition Academy Faculty of Medicine, University of Indonesia	SEAMEO-RECFON Association of Nutritional Higher Education Institutions (AIPGI)
Lao PDR	Department of Professional Education-MOH Nutrition Center – MOH	Faculty of Medicine, Faculty of Nursing – University of Health Sciences
Myanmar	National Nutrition Center, MOHS	Myanmar Nursing and Midwifery Association UN WFP Nursing Training School, Yangon Central Midwifery School, Yangon University of Nursing, Yangon
Philippines	Family Health Office- Department of Health	Association of Philippine Schools of Midwifery Association of Philippine Medical Colleges, Inc. Association of Deans of Philippine Colleges of Nursing, Inc. Council of Deans and Heads of Nutrition and Dietetics